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## NOTICE OF ALLOWANCE AND FEE(S) DUE

2352 7590 06/02/2009

OSTROLENK FABER GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 100368403

EXAMINER

LAZORCIK, JASON L

ART UNIT

PAPER NUMBER

1791

DATE MAILED: 06/02/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,775

06/29/2006

Bogdan Vuletic

P/3240-110

9439

TITLE OF INVENTION: PROCESS AND INSTALLATION FOR GRANULATING SLAG

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/02/2009

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

2352 7590 06/02/2009  
**OSTROLENK FABER GERB & SOFFEN**  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 100368403

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,775	06/29/2006	Bogdan Vuletic	P/3240-110	9439

TITLE OF INVENTION: PROCESS AND INSTALLATION FOR GRANULATING SLAG

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/02/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
LAZORCIK, JASON L	1791	065-019000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/572,775	06/29/2006	Bogdan Vuletic	P/3240-110	9439
2352	7590	06/02/2009	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			LAZORCIK, JASON L	
			ART UNIT	PAPER NUMBER
			1791	
DATE MAILED: 06/02/2009				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 173 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 173 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/572,775	VULETIC, BOGDAN	
	<b>Examiner</b>	<b>Art Unit</b>	
	JASON L. LAZORCIK	1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/24/32009.
2. ☒ The allowed claim(s) is/are 1,2,4-11,20 and 26.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date <u>3/24/2009</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                    | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

/J. L. L./  
Examiner, Art Unit 1791

## **DETAILED ACTION**

### ***Status of the Claims***

Applicants reply dated March 24, 2009 amends claim 1, 11 and 20, and adds new claim 26.

Claims 1-2 and 4-26 are pending in the Application.

Claim 3 was previously cancelled by Applicant and Claims 12-19 and 21-25 were withdrawn from consideration without traverse pursuant to Applicants April 1, 2008 reply to the restriction election requirement dated March 13, 2008.

Therefore, Claims 1-2, 4-11, 20, and 26 are pending for prosecution on the merits.

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel Claims 12-19 and 21-25.

### ***Election/Restrictions***

2. This application is in condition for allowance except for the presence of Claims 12-19 and 21-25 directed to an installation for granulating slag from a blast furnace or a

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smelting reduction plant non-elected without traverse in Applicants reply dated April 1, 2008. Accordingly, claims 12-19 and 21-25 been cancelled.

***Allowable Subject Matter***

3. Claims 1-2, 4-11, 20, and 26 are allowed.

4. The following is an examiner's statement of reasons for allowance:

5. Applicant's independent claim 1 encompasses the broadest scope. Said Claim 1 is directed to a process for granulating slag from a blast furnace or smelting reduction plant comprising a step of quenching and granulating slag, partially condensing H<sub>2</sub>S containing vapors formed during the quenching step in a condensation space, discharging residual H<sub>2</sub>S vapors from the condensation space, and directing the discharged residual gases back to a hot slag channel to oxidize residual H<sub>2</sub>S gas to oxidize or burn the H<sub>2</sub>S gas to form SO<sub>2</sub>. At issue is the limitation recited in presently amended claim 1, lines 11-13 wherein the residual gasses are passed "through a hot slag channel in countercurrent to a flow direction of hot slag therethrough, thereby burning H<sub>2</sub>S to form SO<sub>2</sub>". After careful consideration of the relevant prior art of record, it is the Examiners assessment that the process for granulating slag comprising every limitation of independent claim 1 and specifically requiring a step of passing residual H<sub>2</sub>S containing gasses "through a hot slag channel in countercurrent to a flow direction of hot slag therethrough" is neither explicitly disclosed nor fairly suggested by any single reference nor combination of references made of record to date.

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6. The reference to Kiyoshi (Japanese Patent Publication number JP 08-245243) cited in the Official Action dated December 24, 2008 and the reference to Wurth et al. (Luxembourg patent number LU 88441 A) made of record in the Information Disclosure Statement (IDS) dated March 25, 2009 constitute the closest prior art of record.

7. With respect to the Kiyoshi reference, the English language translation states in pertinent part that "gas 6G3 sent out by the induction blower 26 is supplied to the blast furnace 1, where it reacts with a desulfurization material, such as lime, inserted to subject the gaseous H<sub>2</sub>S and gaseous SO<sub>2</sub> contained in the gas 6G3 thereof to iron making" (page 26, ¶[0043]). Kiyoshi continues by teaching that "If the gas 6G3 is fed back to the blast furnace 1 by becoming some of the hot gas, the gaseous H<sub>2</sub>S and Gaseous SO<sub>2</sub> are desulfurized by the lime or the like used for the auxiliary material charged into the blast furnace 1, and slagged. The slag 3 thereof is subjected to the water granulation treatment as mentioned above...the gaseous H<sub>2</sub>S and gaseous SO<sub>2</sub> generated in the water granulation treatment step are circulated in the system along with the exhaust gas 6 and subsequently discharged as slag."(page 40, ¶[0069-0070]). In view of the foregoing, it would appear evident to the Examiner that Kiyoshi teaches recirculating residual gases through a hot slag channel in a cocurrent flow to the flow direction of hot slag therethrough. Kiyoshi is silent regarding a step of directing residual gases in a countercurrent direction to the flow of hot slag through a hot slag channel.

8. With respect to the Wurth reference, the instant disclosure teaches a method for granulating slag by quenching, partially condensing H<sub>2</sub>S containing vapors formed during the quenching step in a condensation space, and recirculating any residual

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gases back to a hot slag channel. Regarding this recirculated gas, Wurth teaches that "The gases removed via the line 24 are conveyed and released close to the channel 10 conveying the clag to the granulating head 14. Any hydrogen sulfide that has not been removed during the glass scrubbing in the tower 20 is oxidized to sulfur dioxide. The gases conveyed to the channel are entrained by the stream of scoria into the tower 20, to be reprocessed therein" (see page 8, English translation dated 3/24/2009) . As with the Kiyoshi reference above, it is the Examiners assessment that Wurth teaches recirculating residual gases in a cocurrent direction to the flow of the hot slag through the hot slat channel 10 for reprocessing in the tower 20.

9. In summary, Kiyoshi and Wurth teach essentially every step in Applicants recited process including, *inter alia*, a step of quenching and granulating slag, partially condensing H<sub>2</sub>S containing vapors formed during the quenching step in a condensation space, discharging residual H<sub>2</sub>S vapors from the condensation space, and directing the discharged residual gases back to a hot slag channel to oxidize residual H<sub>2</sub>S gas to oxidize or burn the H<sub>2</sub>S gas to form SO<sub>2</sub>. Where both of these references teach recirculation of residual gases in a cocurrent direction to the hot slag, it is the Examiners conclusion that neither reference fairly teaches nor suggests Applicants recited step of "through a hot slag channel in countercurrent to a flow direction of hot slag therethrough, thereby burning H<sub>2</sub>S to form SO<sub>2</sub>".

10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably



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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

11. Applicant's arguments, see pages 9-11, filed March 24, 2008, with respect to the rejection of claims under 35 U.S.C. §103(a) have been fully considered and are persuasive. The rejection of claims 1-2, 4, 9-11, and 20 has been withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. LAZORCIK whose telephone number is (571)272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/  
Supervisory Patent Examiner, Art  
Unit 1791

/J. L. L./  
Examiner, Art Unit 1791